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SUBJECT Serp i Molot Metallurgical Works, Moscow

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General

1. The Moscow Serp i Molot (Sickle and Hammer) Metallurgical Works (Moskovski Metallurgicheski Zavod Serp i Molot) is described as "Twice Order-bearing" (Dvazhdy Ordenosny). In 1939 it was awarded the Order of Lenin and in 1945, on the conclusion of the war, the Order of the Red Banner of Labor.
2. It is located at No. 11 Zastava Iliche (ex-Rogozhskaya Zastava), Moscow. Zastava Iliche leads into Zolotorozhskaya ul. and is about 1.5 kms from Kursk Railway Station.
3. The works is under the Ministry of Metallurgical Industry and is controlled by the Chief Directorate for Special Steels of the Ferrous Metallurgy Industry (Glavnoye Upravleniye Spetsialnykh Stalei Promyshlennosti Chernoi Metallurgii or Spetsstal).
4. The works was founded in the 1880's. Before the revolution, it was owned by the Goujon Company and included a Martin shop with seven small furnaces, a rolling shop with three mill trains, a sheet rolling mill, a calibrating mill train (kalibrovchny stan) installed in 1908, a steel foundry shop (fasonno liteiny tsekh), a metal construction shop, and other auxiliary shops.
5. When the works was nationalized after the revolution, it was given the title "Serp i Molot". In 1931, the works joined the All-Union Association of High-quality Steels and Ferrous Alloys (Vsesoyuznoye Obединeniye Kachestvennykh i Vysokokachestvennykh Stalei i Ferrosplavov).
6. During World War II, the works was evacuated to the Urals but, on the conclusion of hostilities, returned to its old site in Moscow. Since the revolution, it has been considerably expanded and largely reconstructed and modernized. Expansion continues, and new shops and modern machinery are being introduced. For the current five-year period (1946-1950), the works was allotted 70,000,000 rubles to be devoted to increasing its capacity. Up to early 1949, about 55,000,000 rubles had been spent.

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Type of Product

7. The works produces the following:

- a. High-quality special furnace-smelted steels of various kinds.
- b. Rolled sheet, section steel, and steel castings of various kinds.
- c. Metal goods such as steel wire made from various grades of steel, steel ropes and cables, also calibrated steel goods and consumer goods.
- d. Hot-rolled sheets of stainless chromium steel (Marks EZhl, EZh2, and EZh3).
- e. Cold-rolled sheets of acid-proof chromium-nickel steel (Marks Yal, Ya2, and YalT).
- f. Heat-resisting steel sheets (Mark YaZS).
- g. Hadfield steel.
- h. Cold-rolled stainless strip (lenta) steel for aviation and other industries (manufactured from steel Marks Yal, Ya2, and YalT).
- i. High-quality carbon steel for membranes (membrana) (Mark U8GA).
- j. Carbon tool-steel sheets (Marks U7, U8, U9, U7A, etc.).
- k. Tool section steel (round and square sections) of numerous sizes from 7 mm to 150 mm and above (diameter or side of square)
- l. Calibrated cold-drawn carbon steel (Marks 10, 15, 20, 25, etc.).
- m. Calibrated chromium-molybdenum alloy steel (30KhMA).
- n. Chromium manganese silicon steel (khromansil) (30KhGSA).
- o. Serebryanka, ground circular rods of stainless chromium steel, manufactured from acid-proof chromium-nickel steel, magnetic chromium steel, etc.
- p. Armko mild steel.
- q. Structural chromium steel for ball and roller bearings (Marks ShKh6, ShKh9, ShKh10, ShKh12, and ShKh15).
- r. Magnetic steel (Marks EK15, EMK15).
- s. Strip steel manufactured from alloys of high electrical resistance (Marks EKHN60 and EI 87).
- t. Transformer steel (Marks ES4, ES4A).
- u. Automatic quality steel (avtomatnaya kachestvennaya stal) (Mark Al2).
- v. Structural carbon steel wire manufactured from high-quality steel (Marks 10, 15, 20, etc.).
- w. Carbon steel wire for ropes and cables manufactured from Martin steel (Marks 50, 60, and 65).
- x. Stainless chromium steel wire.
- y. Bimetallic wire.
- z. Stainless steel ropes.
- aa. Special steel armor of various thicknesses.

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8. Considerable importance is attached to the production of stainless steel. In February 1949, the erection of a special shop for the production of stainless strip steel was started. Large quantities of steel articles for the ball-bearing industry are manufactured.

Production

9. The total output of high-quality steel from the two Martin shops during 1948 was approximately 260,000 tons. The 1st Martin shop produced about 180,000 tons during this period. [redacted] the output of the 2nd Martin shop [redacted] was very much lower than that of the 1st Martin shop and estimated it at about 80,000 tons. 50X1-HUM
10. The output of the Martin furnaces has increased during the last few years as a result of the introduction of automatic and mechanical operating devices and new equipment, including the following:

Automatic air valve and smoke damper controls
 Mechanization of furnace charging process
 Charging machinery
 Bridge cranes
 Mechanization of foundry

11. During the last two years, oxygen has been employed with Martin furnaces to increase temperatures. The introduction of oxygen in connection with smelting cut down time required by a sixth, and reduced the consumption of mazout by a quarter.
12. During the war, Martin furnaces received little pig iron and employed a scrap carburization process in which carbon substances are used instead of pig iron. The supply of pig iron is now satisfactory. 50X1-HUM

13. [redacted] other production [redacted]

a. The sheet rolling shop produced about 11,000 tons of rolled and semi-rolled goods in 1948. Output per 24 hours was 30-36 tons, in three shifts.

b. The cable shop produced about 6,000 tons of steel cables in 1948. 50X1-HUM

Personnel

14. At the beginning of 1949, the total personnel at the works was approximately 12,000.

Director

Ilin, who was appointed to this post before the war.

1st Martin shop

Head: Aleksandr Alekseyevich Lebedkov
 Assistant: Lebedev
 Head Foreman: Chesnokov

2nd Martin shop

Head: Mamentiyev, who was formerly head of the steel foundry.

Foundry

Head: Romanov

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Rolling shop

Head: Belozеров

Sheet rolling shop

Head: Prokopovich

Mill train No. 750

Head: Ivan Ivanovich Turtanov

Mill train No. 250

Head: Fokin (temporary)

Breaking and preparation shop

Head: Balyasinov

Power supply shop

Head: Chief "Energetic" Starovich

Central research laboratory

Head: Engineer Zhatvin

15. Three shifts are worked as follows: 8.00 a.m. to 4.00 p.m., 4.00 p.m. to 12 midnight, 12 midnight to 8.00 a.m.

Shops and Sections

16. 1st Martin shop: The works originally had only one Martin shop which contained all the steel-smelting furnaces. Furnaces were gradually reconstructed. In 1937, two electric furnaces started operating. During the war, a new low-power (malo-moshchnaya) Martin furnace No. 7 was constructed, and all Martin furnaces were again overhauled. The 1st Martin shop now has four Martin furnaces, Nos. 1, 2, 3, 4, all of approximately the same type and all working on mazout. This shop, which is sometimes known as the "old Martin shop", worked well during the war and on several occasions received rewards in competitions for Martin shops of the Union. It can be assumed that there are always three Martin furnaces working. In 1948, the average output of a furnace was 170 tons of steel in 24 hours, and the output norm per square meter of smelting surface was fixed at 5.5 tons. Many steel smelters exceeded this norm. In 1948, the time norm for a smelting was fixed at 8.5 hours; but so-called "speed smeltings" (skoroatnaya plavka) which require less time than the norm allows, are continually taking place. Smeltings requiring only 5.5 hours have actually taken place.
17. 2nd Martin shop: Also known as the "new Martin shop". This shop has three Martin furnaces, Nos. 5, 6, and 7, and two electric furnaces. Furnace No. 7 is a low-power furnace which was built during the war. The norm for this furnace during one shift is fixed at 24 tons. This norm is exceeded by a considerable amount. Instances have occurred when 40 tons have been reached at a smelting. The output norm per square meter of smelting surface for the 2nd Martin shop was fixed at 7.15 tons, but this norm has been exceeded.
18. Rolling shop: This shop is also known as the section steel rolling shop (sortoprokatny tsekh). It is separated from the Martin shop by the foundry (литейный зал) and the ingot store. The rolling shop contains mill trains

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- a. The main mill train [] prepares rolling material for the other mill trains. Mill train [] was formerly equipped with four methodical (metodicheski) furnaces for heating ingots. In 1946, a new large-capacity methodical furnace was built for this mill train. This furnace can heat up to 250 ingots a shift. In 1948, the norm for rolling ingots was fixed at 360 ingots per shift. This norm was frequently exceeded, and the rolling of 470 ingots per shift is not unknown. Mill

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train [] was made from the old mill train [] before the war. The mill train was reconstructed in 1946 and early 1947. The possibility is now being considered of converting the mill train to take heavier ingots and thus to increase output. It is thought that this conversion will take place within a few months.

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b. Mill train [] is employed with medium section steel. The norm of 40 tons per shift is exceeded.

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c. Mill train [] employed with small section steel, was rebuilt in 1948.

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d. Mill train [] is also employed with small section steel.

19. Sheet rolling shop: During the current five-year period, this shop has been modernized and considerably expanded. The shop has sections for hot and cold rolling. The mill train for cold rolling was made at the Uralmash Heavy Engineering Works. In 1946, the mill train stopped, but it was restarted at the beginning of 1948 and is now working satisfactorily.
20. Steel wire "metizny" shop: "Metiz" is an abbreviation of "metallicheskoye izdeliye" (metal article); wire comes under the category of metal articles. During the current five-year period, the shop has been considerably expanded. Prior to the war, it received modern equipment. The shop now produces steel wire of special marks, including stainless steel wire and bimetallic wire.
21. Calibration shop (kalibrovochny tsakh): This shop produces calibrated ground steel rods of various types and designs, including high electrical resistance steel. This shop is also known as the "calibration 'metizny' shop".
22. Steel foundry (tsakh fasonnogo litiya): The foundry produces steel castings, including castings from manganiferous steel, crankshafts for engines, castings for the tank industry, points and crossings for the Moscow and Leningrad tramway systems, escalator parts for the Moscow underground railway; and castings for electric power stations, non-ferrous industry, and the Ministry of Transport Machinery. The shop is being rebuilt and enlarged.
23. Cable shop: Also known as a "metizny" shop. It produces steel cables and ropes of various kinds, chiefly for the coal and aviation industries.
24. Metal construction shop: This shop produces equipment and metal articles such as bridge cranes and moulding machines, and supplies metal articles to the repair and construction shop. It produces mainly for the requirements of the works, but also manufactures equipment such as bridge cranes for ferrous metallurgy factories.
25. Bimetallic shop: This shop, which came into being after the war, manufactures bimetallic articles.
26. Breaking and preparation shop (koprovo-zagotovitelny tsakh): This shop sorts scrap and prepares it for the Martin furnaces. Metal scrap is received from Vtorchermet (Secondary Ferrous Metal Trust) undertakings in Moscow, Voronezh, Kalinin, and Bryansk. In the past, there have been frequent shortages of scrap. In 1946, the monthly delivery of scrap was sometimes 4,000-5,000 tons short. In 1948, the scrap supply was put on a satisfactory basis.
27. Charging yard (shikhtovy dvor): This is where scrap is sorted. Because the yard is small, sorting and packing are carried out under difficulties. In 1947, a chemical process for sorting scrap was introduced which was of considerable importance in connection with the smelting of special steel in Martin furnaces.

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28. Pressing shop (pressovy tsekh): This is a well-equipped shop connected with forging.
29. Ceramic (refractory) shop (ogneuporny i pechnoi tsekh): It produces dolomite. Cupola furnaces are located in the yard behind the breaking and preparation shop.
30. Power station (energeticheski tsekh): No details.
31. Engineering and repair shop (remontno-mekhanicheski tsekh): No details.
32. Construction and repair shop (remontno-stroitelny tsekh): No details.
33. Railway shop: No details.
34. Communications shop (tsekh svyazi): No details.
35. Consumer goods shop (shirpotreba): This is a large and well-equipped shop which produces a large number of consumer goods from waste products of the works.
36. In addition to shops, the works has several sections (otdely), such as:

Supply section (otdel snabzheniya)
 Sales section (otdel sbyta)
 Capital construction section (otdel kapitalnogo stroitelstva)
 Commercial section (kommercheski otdel)
 Technical section (tekhnicheski otdel)
 Planning and economic section (planovo-ekonomicheskii otdel)
 Personnel and wages section (otdel kadrov i zarabotnoi platy)

37. The works has a central research laboratory (tsentralnaya issledovatel'skaya laboratoriya or TsIL), which controls all small laboratories. The latter are to be found in important shops, such as the steel smelting laboratory, thermic laboratory, rolling laboratory, and stainless steel laboratory. The laboratories carry out research work and analyze high-quality steel ingots and finished rolled goods. All material is examined in a laboratory before being released for industrial production.

Transport

38. The works has a well-equipped railway transport system, with branch lines for bringing up material and dispatching finished products. Metal scrap is brought directly to the yard, where it is sorted and packed for Martin furnaces. The works also has a large motor transport park with its main garage at Zolotorozhski Val, Moscow.

Living Conditions

39. Living conditions on the whole are satisfactory. The construction of new houses continues and small workers' settlements are being built. For instance, at Perovo Pole, where a workers' settlement of 12 two-storied buildings is being built, work is taking place on a large scale. Several buildings are being erected at Krasnokholmskaya Naberezhnaya and also at Zolotorozhski Val, both in Moscow. A second workers' settlement at Perovo Pole is being planned. The works has a night sanatorium and a resthouse, which is located near Ramenskoye. It also has three workers' training schools (FZO), which are situated on the 2nd Prolomny Proyezd, Moscow. One of these schools for specialists is called the Evening Metallurgical Institute (Vecherni Metallurgicheski Institut). The works publishes a paper, called Martenovka which has a circulation of about 5,000.

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